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(54) AGRICHEMICAL SOLID FORMULATION

(57)Abstract:

PURPOSE: To improve the storage stability of acephate in an acephate technical product or in an agrichemical solid formulation containing the acephate by adding synthetic aluminum silicate.

CONSTITUTION: A method for stabilizing acephate comprises adding synthetic aluminum silicate to an acephate technical product or an agrichemical solid formulation containing the acephate, and the acephate improved in storage stability by adding the synthetic aluminum silicate.

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CLAIMS

[Claim(s)]

[Claim 1] Agricultural-chemicals solid preparations characterized by containing acephate and synthetic aluminum silicate.

[Claim 2] A stabilization method of agricultural-chemicals solid preparations characterized by adding synthetic aluminum silicate in agricultural-chemicals solid preparations containing acephate.

[Claim 3] Stable acephate which comes to add synthetic aluminum silicate.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the stable agricultural-chemicals solid preparations containing acephate.

[Description of the Prior Art] Acephate (O, S-dimethyl aceti RUHOSU foramide thioate) is a compound which has [with a page / 1st / of edition / of The Pesticide Manual / 8th / (1987 The British Crop Protection Council issue)] the insect-killing activity of a publication, and since it is effective in prevention of various noxious insects, it is used as an active principle of the insecticide for current agriculture.

[Problem(s) to be Solved by the Invention] However, since the stability of acephate of a under [agricultural-chemicals pharmaceutical preparation] was not not much high, depending on conservation conditions, decomposition of the acephate in pharmaceutical preparation was intense, and, as a result, might be unable to harness insecticidal potential of acephate effectively. Then, development of the stable agricultural-chemicals pharmaceutical preparation containing acephate was desired.

[0002]

[Means for Solving the Problem] This invention offers stable agricultural-chemicals solid preparations containing acephate and synthetic aluminum silicate, and twists them for acephate in agricultural-chemicals solid preparations to be stabilized by addition of synthetic aluminum silicate. Generally an amount of synthetic aluminum silicate effective in stabilizing acephate is more than the 0.05 weight section to the acephate 1 weight section. Usually synthetic aluminum silicate used in this invention adds water-soluble aluminum salts, such as an aluminum chloride and an aluminum sulfate, to a specific silicate aqueous solution, is manufactured by drying settlings, and has detailed structure by **** compared with aluminum silicate produced naturally.

[0003] Although agricultural-chemicals solid preparations of this invention contain (a) acephate, (b) composition aluminum silicate, and solid support for (c) pharmaceutical preparation, synthetic aluminum silicate itself can also usually be used for them as solid support for pharmaceutical preparation. A content of synthetic aluminum silicate which a content of acephate in agricultural-chemicals solid preparations of this invention is generally 5 - 95 % of the weight preferably 0.5 to 99% of the weight, and is a stabilizing agent is usual [which can stabilize acephate / an amount and 1 - 99 % of the weight of usual]. As solid support for pharmaceutical preparation used in this invention, nature support of organic, such as minerals support, such as synthetic support, such as mineral salt, such as mineral matter support, such as kaolin clay, attapulgite clay, sericite clay, pyrophyllite clay, montmorillonite clay, a zeolite, a bentonite, acid clay, activated clay, serpentine, talc, and diatomaceous earth, a sulfate, a nitrate, and a chloride, and a silica, a saccharide, starch, a dextrin, wheat flour, a soybean meal, corn powder, and wood flour, be mentioned Such solid support for pharmaceutical preparation is usually preferably contained 20 to 70% of the weight one to 90% of the weight in agricultural-chemicals solid preparations of this invention.

[0004] Agricultural-chemicals solid preparations of this invention may contain various kinds of adjuvants for agricultural-chemicals pharmaceutical preparation as occasion demands further, a surfactant, coloring matter, perfume, a well-known stabilizing agent, etc. are mentioned as this adjuvant for pharmaceutical preparation, and these are usually preferably contained two to 10% of the weight 0.1 to 35% of the weight in agricultural-chemicals solid preparations of this invention. As a surfactant, for example Alkyl-sulfuric-acid ester salts, such as sodium lauryl sulfate, Alkylaryl sulfonates, such as alkyl naphthalene sulfonic-acid sodium, Ligninsulfonic acid salts, such as ligninsulfonic acid sodium, a succinate derivative, A polyethylene-glycol alkyl aryl ethereal sulfate ester salt, The Nonion nature surfactants, such as anionic surfactants, such as a formaldehyde condensate of an aromatic series sulfonate, polyoxyethylene alkyl ether, polyoxyethylene alkyl aryl ether, and the polyoxyethylene aryl aryl ether, are mentioned.

In addition, agricultural-chemicals solid preparations of this invention may contain an agricultural-chemicals active ingredient of further others.

[0005] A surfactant etc. is added further as occasion demands and it mixes by a mixer etc., and grinders, such as Ayr Mill, a hammer mill, and a centrifugal type grinder, grind, or agricultural-chemicals solid preparations of this invention are manufactured by (a) acephate, (b) composition aluminum silicate, solid support for (c) pharmaceutical preparation, and usual method of casting these grinding objects to granularity using compacting machines, such as a roller compactor, a pellet mill, and tumbling granulator further.

[0006]

[Example] Although the example of pharmaceutical preparation and the example of a trial are given and this invention is hereafter explained more to details, this invention is not limited only to the following examples.

After mixing the example of pharmaceutical preparation 1 acephate 50 weight section, and the P820 (Degussa AG composition aluminum silicate) 50 weight section by the mixer, it pulverizes with a centrifugal type grinder and the water dispersible powder which is the agricultural-chemicals solid preparations of this invention is obtained.

The example of pharmaceutical preparation 2 acephate 25 weight section, the sodium dodecylbenzenesulfonate 5 weight section, P820 After mixing 50 weight sections and the kaolinite clay 20 weight section by the mixer, it pulverizes with a centrifugal type grinder and the water dispersible powder which is the agricultural-chemicals solid preparations of this invention is obtained.

[0007] After mixing the example of pharmaceutical preparation 3 acephate 10 weight section, the sodium-lauryl-sulfate 5 weight section, and P82085 weight section by the mixer, it pulverizes with a centrifugal type grinder and the water dispersible powder which is the agricultural-chemicals solid preparations of this invention is obtained.

After mixing the example of pharmaceutical preparation 4 acephate 75 weight section, the sodium-lauryl-sulfate 5 weight section, and P82020 weight section by the mixer, it pulverizes with a centrifugal type grinder and the water dispersible powder which is the agricultural-chemicals solid preparations of this invention is obtained.

[0008] The water dispersible powder obtained in the example 1 of pharmaceutical preparation of the example of trial 1 above was enclosed with 50ml ** glass ampoule, and it saved for two weeks in 60-degree C humidistat. Using the gas chromatography, the acephate content in the pharmaceutical preparation before and behind conservation was measured, and the cracking severity was searched for by the degree type.

[Equation 1]

$$\text{分解率 (\%)} = 100 - 100 \times \frac{\text{保存後のアセフェート含量}}{\text{保存前のアセフェート含量}}$$

Moreover, it sets for the example 1 of pharmaceutical preparation, and is P820. Cracking severity was similarly searched for about the comparison pharmaceutical preparation 1 which replaced with 50 weight sections and manufactured medicine like **** for the WESSARON S (Degussa AG composition silicic acid) 50 weight sections. A result is shown in a table 1.

[A table 1]

供試組成物	分解率 (%)
製剤例 1 の組成物	1
比較製剤 1	35

[0009] The water dispersible powder obtained in the example 2 of pharmaceutical preparation of the example of trial 2 above was enclosed with 50ml ** glass ampoule, and it saved for two weeks in 60-degree C humidistat. Using the gas chromatography, the acephate content in the pharmaceutical preparation before and behind conservation was measured, and the cracking severity was searched for by the above-mentioned formula. Moreover, it sets for the example 2 of pharmaceutical preparation, and is P820. Cracking severity was similarly searched for about the comparison pharmaceutical preparation 2 which replaced with 50 weight sections and manufactured medicine like **** for the Carplex 80 (Shionogi composition silicic acid) 50 weight sections. A result is shown in a table 2.

[A table 2]

供試組成物	分解率 (%)
製剤例 2 の組成物	5
比較製剤 2	39

[0010]

[Effect of the Invention] It comes to improve the conservation stability of the acephate in the agricultural-chemicals solid preparations in which this invention contains an acephate Hara object or acephate by addition of synthetic aluminum silicate.

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